



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Re: Application of: **Stefan MORGENSTERN et al.**  
Serial No.: 10/585,162 Confirmation No.: 8326  
Filed: June 30, 2006  
For: **DEVICE FOR SUSPENDING GUIDE BLADES**  
Art Unit: 3745  
Examiner: Jesse M. Prager  
Customer No.: 23280  
Atty. Docket: 5038.1030  
Customer No.: 23280

Mail Stop: APPEAL BRIEF – PATENTS  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

May 24, 2010

**APPELLANT'S BRIEF UNDER 37 C.F.R. § 41.37**

Sir:

Appellant submits this brief for the consideration of the Board of Patent Appeals and Interferences (the "Board") in support of their appeal of the Final Rejection dated October 7, 2009 in this application. The statutory fee of \$540.00 for filing an appeal brief is paid concurrently herewith.

05/28/2010 HVUONG1 00000006 10585162  
01 FC:1402  
540.00 OP

## REAL PARTY IN INTEREST

The real party in interest is MTU Aero Engines GmbH, a corporation having a place of business in Muenchen, Germany and the assignee of the entire right, title and interest in the above-identified patent application. The invention was assigned to MTU Aero Engines GmbH by an assignment from inventors Stefan MORGESTERN and Rudolf STANKA. The assignment was recorded on June 30, 2006 at reel 018042 frame 0240.

## I. RELATED APPEALS AND INTERFERENCES

Appellant, his legal representatives, and assignee are not aware of any appeal, interference or judicial proceeding that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.

## II. STATUS OF CLAIMS

Claims 1 to 10 were cancelled. Claims 11 to 22 are pending. Claims 11 to 22 have been finally rejected as per the Final Office Action dated October 7, 2009.

The rejections to claims 11 to 22 thus are appealed. A copy of pending claims 11 to 22 is attached hereto as Appendix A.

## III. STATUS OF AMENDMENTS AFTER FINAL

No amendments to the claims were filed after the final rejection. A Notice of Appeal was filed on March 18, 2010 and received by the U.S.P.T.O. on March 23, 2010.

## IV. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 11 recites a device (see, e.g. paragraph [0010] and 10 in Fig. 1) for suspending gas channel elements on a housing (see, e.g. paragraph [0019] and 19 in Fig. 2) of a gas turbine, comprising a plurality of first plate-shaped elements (see, e.g. paragraph [0010] and

11, 12, 13, 14 in Fig. 1) connected to a plurality of second plate-shaped elements (see, e.g. paragraph [0010] and 15, 16, 17 in Fig. 1), the first plate-shaped elements (see, e.g. paragraph [0010] and 11, 12, 13, 14 in Fig. 1) and the second plate-shaped elements (see, e.g. paragraph [0010] and 15, 16, 17 in Fig. 1) being connected to one another only by web-like elements (see, e.g. paragraph [0010] and 18 in Fig. 1), each web-like element (see, e.g. paragraph [0010] and 18 in Fig. 1) extending approximately perpendicularly (see, e.g. paragraph [0010]) to the first (see, e.g. paragraph [0010] and 11, 12, 13, 14 in Fig. 1) and second plate shaped elements (see, e.g. paragraph [0010] and 15, 16, 17 in Fig. 1) to which it is connected and forming a crenelated profile (see, e.g. paragraph [0010] and Fig. 1) extending in a circumferential direction of the housing, a length of the housing (see, e.g. paragraph [0019] and 19 in Fig. 2) in the circumferential direction being greater, by a multiple greater than one, than a length of the web-like element in an axial direction.

Dependent claim 21 (argued separately) recites the device as recited in Claim 11, further comprising a gas channel element (see, e.g. paragraph [0021] and 23 in Fig. 2) having at least one projection (see, e.g. paragraph [0021] and 25 in Fig. 2), each projection having a recess (see, e.g. paragraph [0021] and 26 in Fig. 2) therein, each recess having one of the second plate-shaped elements (see, e.g. paragraph [0021] and 15 in Fig. 2) inserted therein for connecting the gas channel element to said one of the second plate-shaped elements.

## VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 11-17, 19 and 20 should have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hayton (U.S. Patent 6,041,590) in view of Jourdain (U.S. Patent 5,069,034) and further in view of Tanrikut (4,361,010).

Whether claim 18 should have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hayton in view of Jourdain, in further view of Tanrikut as applied to claim 16, and further in view of Roth et al (U.S. Patent 4,8332,568).

Whether claim 21 should have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hayton in view of Jourdain, in further view of Tanrikut as applied above to claim 11, and further in view of Pidcock (U.S. Patent 5,435,139).

Whether claim 22 should have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hayton in view of Jourdain, in further view of Tanrikut as applied above to claim 11, and in further in view of Rogers (U.S. Patent Application Publication 2002/0197153).

## VII. ARGUMENTS

### Rejections under 35 U.S.C. 103(a):

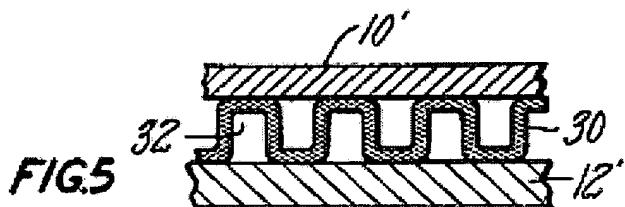
Claim 11 is the only pending independent claim of the present application. In the Office Action, the Examiner rejects claim 11 as allegedly obvious over U.S. 6,041,590 to Hayton (Hayton) in view of U.S. 5,069,034 to Jourdain (Jourdain) and in further view of U.S. 4,361, 010 to Tanrikut (Tanrikut). In rejecting claim 11, the Examiner alleges that Hayton discloses each and every element of claim 1, except that “Hayton does not disclose the web-elements which extend perpendicularly to first and second plate elements, and web elements with length in the circumferential direction being greater, by a multiple of one, than the width.” Office Action, p. 3.

Claim 11 recites:

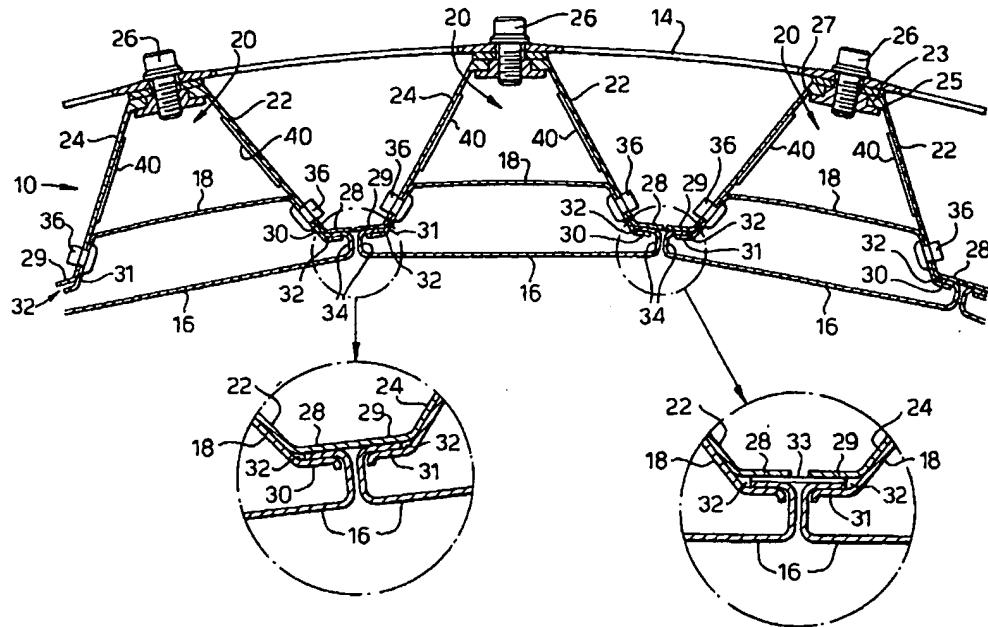
A device for suspending gas channel elements on a housing of a gas turbine, comprising a plurality of first plate-shaped elements connected to a plurality of second plate-shaped elements, the first plate-shaped elements and the second plate-shaped elements being connected to one another only by web-like elements, each web-like element extending approximately perpendicularly to the first and second plate shaped elements to which it is connected and forming a crenelated profile extending in a circumferential direction of the housing, a length of the housing in the circumferential direction being greater, by a multiple greater than one, than a depth of the housing in an axial direction.

The Examiner admits that "Hayton does not disclose each web-like element extending approximately perpendicularly to the first and second plate shaped elements to which it is connected."

The Examiner then alleges that "Tanrikut discloses each web-like element extending in the perpendicularly to the first and second plate shaped elements to which it is connected (Fig. 5)" Office Action at p. 5. Figure 5 of Tanrikut shows a corrugated sheet 30 of Finwall material for a combustor liner:



It is respectfully submitted that one of skill in the art never would have modified Hayton's A-frame construction to provide perpendicular walls, whether in view of Tanrikut or alone. Hayton's A-frame construction is shown as follows:



As for example, discussed at for example, at col. 2, line 31 to 33, the “A-frame construction is inherently tolerant of circumferential expansion, and contraction” in a way that is not present with the perpendicular web-like elements of present claim 11. Hayton thus teaches away from such a perpendicular construction, and desires the angular A-frame construction to tolerate circumferential expansion. When desiring perpendicular walls, Hayton turns to a completely different construction to minimize circumferential stresses. See, e.g., Fig. 7 of Hayton.

Also, the motivation given for the combination is clearly based on impermissible hindsight reasoning. The purported reason for modifying the structure of Hayton in view of the corrugated sheet 30 of Tanrikut is that Tanrikut “enables parallel and counter flow cooling which substantially reduces axial and radial temperature gradient over the panel.” **However, Hayton already teaches that with its A-frame structure “differential thermal expansion between the hottest and coldest parts of the panels is virtually totally eliminated.” Col. 4, lines 27 to 29 of Hayton. There simply is no need or desire in Hayton for the purported Final Office Action modification: there is no substantial temperature gradient over the panels, as Hayton clearly**

*states.* The rejection is clearly based on impermissible hindsight. See MPEP 2143.

Finally, with respect to claim 11, the Final Office Action at page 5 on the bottom is simply in error in stating that “applicant has not disclosed that having the web-like elements extend perpendicularly solves any stated problem above the fact that the approximately perpendicular arrangement reduces stresses associated with thermal expansion and it appears that the web-like elements of Hayton would perform equally well with extending perpendicularly as claimed by applicant.” The present application at [0019] for example clearly states that the crenelated contour of device 10 permits “a very direct flow of force in the direction of arrow 22” which is not found in the shallow angled arrangement of Hayton. In fact, Hayton requires an extra support 18, and also specifically desires the A-frame configuration that is NOT perpendicular to reduce circumferential expansion.

For this reason as well, it is respectfully submitted that the Examiner’s rejection of claim 11, and claims 12-22 depending therefrom, should be withdrawn.

Claim 21: Argued Separately

Claim 21 recites the “device as recited in Claim 11, further comprising a gas channel element having at least one projection, each projection having a recess therein, each recess having one of the second plate-shaped elements inserted therein for connecting the gas channel element to said one of the second plate-shaped elements.” An example of the claimed recess is recess 26 in Fig. 2.

The Final Office simply does not address the limitation of “each projection **having a recess** therein” and none of the prior art references cited in the rejection with respect to claim 21 shows such a recess.

Withdrawal of the rejection to claim 21 for this reason as well is respectfully requested.

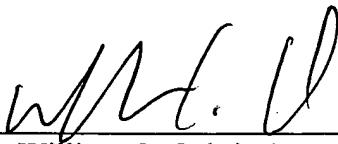
CONCLUSION

It is respectfully submitted that the application is in condition for allowance. Favorable consideration of this appeal brief is respectfully requested.

Respectfully submitted,

DAVIDSON, DAVIDSON & KAPPEL, LLC

By: \_\_\_\_\_



William C. Gehris, Reg. No. 38,156

Dated: May 24, 2010

DAVIDSON, DAVIDSON & KAPPEL, LLC  
485 Seventh Avenue, 14<sup>th</sup> Floor  
New York, NY 10018  
Tel: (212) 736-1940  
Fax: (212) 736-2427

**APPENDIX A:**

PENDING CLAIMS 11 to 22  
U.S. APPLICATION SERIAL NO. 10/585,162

**Listing of Claims:**

Claim 11 (Previously Presented): A device for suspending gas channel elements on a housing of a gas turbine, comprising a plurality of first plate-shaped elements connected to a plurality of second plate-shaped elements, the first plate-shaped elements and the second plate-shaped elements being connected to one another only by web-like elements, each web-like element extending approximately perpendicularly to the first and second plate shaped elements to which it is connected and forming a crenelated profile extending in a circumferential direction of the housing, a length of the housing in the circumferential direction being greater, by a multiple greater than one, than a length of the web-like element in an axial direction.

Claim 12 (Previously Presented): The device as recited in Claim 11, wherein the first plate-shaped elements are connected with the housing of the gas turbine and the second plate-shaped elements are connected with at least one gas channel element.

Claim 13 (Previously Presented): The device as recited in Claim 11, wherein one of the second plate-shaped elements is positioned between two adjacent ones of the first plate-shaped elements such that one end of said one of the second plate-shaped elements is connected to one of said two adjacent first plate-shaped elements via one of the web-like elements, and an opposing end of said one of the second plate-shaped elements is connected to the other one of said two adjacent first plate-shaped elements via another one of the web-like elements.

Claim 14 (Previously Presented): The device as recited in Claim 11, wherein the web-like elements extend axially over an entire width of the first plate-shaped elements and/or the second plate-shaped elements.

Claim 15 (Previously Presented): The device as recited in Claim 11, wherein the device is designed as a closed ring having a crenelated profile.

Claim 16 (Previously Presented): The device as recited in Claim 11, wherein the device is designed as a ring segment having a crenelated profile.

Claim 17 (Previously Presented): The device as recited in Claim 16, wherein the device includes a plurality of said ring segments joined together to form a closed ring.

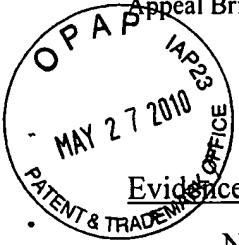
Claim 18 (Previously Presented): The device as recited in Claim 16, wherein the ring segment includes four of said first plate-shaped elements and three of said second plate-shaped elements, said three of said second plate-shaped elements being connected to said four of said first plate-shaped elements via six of said web-like elements.

Claim 19 (Previously Presented): The device as recited in Claim 11, wherein each of said first plate-shaped elements include a bore hole.

Claim 20 (Previously Presented): The device as recited in Claim 19, further comprising bolt-like mounting elements inserted through said bore holes on a housing side of the first plate-shaped elements, thereby connecting the first plate shaped elements to the housing of the gas turbine.

Claim 21 (Previously Presented): The device as recited in Claim 11, further comprising a gas channel element having at least one projection, each projection having a recess therein, each recess having one of the second plate-shaped elements inserted therein for connecting the gas channel element to said one of the second plate-shaped elements.

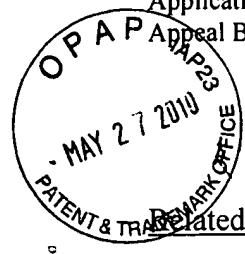
Claim 22 (Previously Presented): The device as recited in Claim 11, wherein at least one of the second plate-shaped elements has a guide pin for circumferential centering or circumferential adjustment of a gas channel element.



## APPENDIX B

### Evidence Appendix under 37 C.F.R. §41.37 (c) (ix):

No evidence pursuant to 37 C.F.R. §§1.130, 1.131 or 1.132 and relied upon in the appeal has been submitted by appellants or entered by the examiner.



## APPENDIX C

### Related proceedings appendix under 37 C.F.R. §41.37 (c) (x):

As stated in "2. RELATED APPEALS AND INTERFERENCES" of this appeal brief, appellants, their legal representatives, and assignee are not aware of any appeal or interference that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.